

cereal is little known in this country, but is much valued in Russia and Germany. It is used both for stock feed, similarly to oats, and also as human food in the form of gruel. It is very resistant to cold and often to drought also, but may suffer some from rust in warm, wet seasons. It is a variety of *Triticum dicoccum*, correctly called emmer, but also known as Russian spelt. The Russian name is "polba." Is worthy of thorough trial. Admirably adapted for trial in all the extreme Northern States, from Minnesota to Washington, and in Alaska; also in arid districts. Amount obtained, 6 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 26.

2260. PANICUM MILIACEUM.

Broom-corn millet.

From Russia. Received March, 1899, through Mr. M. A. Carleton.

Red Orenburg. From the Turgai territory of the Kirghiz Steppes, about 40 miles southwest of Orenburg. Mean annual rainfall, about 15 inches or less; for the growing season (May to September, inclusive), about 8 inches. Mean annual temperature, about 37.9°. Summers short but very hot. Soil differs from the usual "black earth" in being a rather stronger clay with a considerable mixture of sand, making it also grayer in color—the same sort of soil to which durum wheats are so well adapted. Should be sown probably about May 15 or soon after, though in Russia it is sown about the 25th or later. Period of growth, 110 to 115 days. A red-seeded, panicked millet (*Panicum miliaceum sanguineum*), quite different from the ordinary forage millets of our prairie States. Grown chiefly for the seed, which is not only excellent for stock feeding, but in Russia is most widely used for human food in the form of grits or gruel and with soups. Well adapted for trial in the Dakotas, Nebraska, eastern Colorado, Kansas, and similar cold and arid districts. Amount obtained, 3 bushels.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 29.

2261. SECALE CEREALE.

Rye.

From Russia. Received March, 1899, through Mr. M. A. Carleton.

Sisolsk Winter rye. From Ust-Sisolsk, in Vologda government, about 61½° north latitude. Mean annual temperature, 31.7°; for the growing season (May to September, inclusive), 56.5°. Normal rainfall not known, but during one year it was 18 inches. Seed obtained from Mr. A. E. Sukhanof, free of charge. Rotation of crops where seed was grown as follows: (1) Fallow without manure; (2) winter rye; (3) spring barley and oats with manure. Variety grown in that region for many years and therefore thoroughly adapted to extreme cold, and rather drought-resistant. Should be tried in Alaska, and perhaps also in the very coldest districts of the United States proper. Amount obtained, ¾ bushel.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 24.

2262. HORDEUM VULGARE.

Barley.

From Russia. Received March, 1899, through Mr. M. A. Carleton.

Sisolsk Spring barley. From Ust-Sisolsk, in Vologda government, about 61½° north latitude. Mean annual temperature, 31.7°; for the growing season (May to September, inclusive), 56.5°. Normal rainfall unknown, but during a single year it was 18 inches. Seed obtained from Mr. M. I. Tur, free of charge. Rotation of crops where seed was grown as follows: (1) Fallow without manure; (2) winter rye; (3) spring barley and oats with manure. Should be tried principally in Alaska or other extremely cold districts. Amount obtained, ¾ bushel.

Reprinted from Inventory No. 4. See Carleton, Bull. 23, Div. Bot.: 23.

2263. AVENA SATIVA.

Oat.

From Russia. Received March, 1899, through Mr. M. A. Carleton.

Zhelannii oat. From Ust-Sisolsk, in the Vologda government, about 61½° north latitude. Mean annual temperature, 31.7°; for the growing season (May to September, inclusive), 56.5°. Normal rainfall not known, but during a single year it was 18 inches. Variety grown in the region 12 years; originally obtained from Moscow. Thoroughly acclimated. The grower strongly recommends a two-days' soaking of the seed before sowing in order to hasten germination. Seed obtained from Mr. M. I. Tur, free of charge. Rotation of crops where seed was grown as follows: (1) Fallow